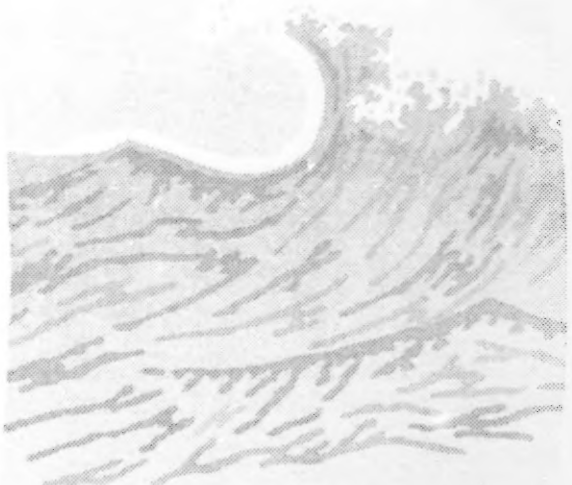
FISHERIES
RESOURCE
CONSERVATION
COUNCIL

STOCKS IN THE NAFO REGULATORY AREA

REPORT TO THE MINISTER OF FISHERIES AND OCEANS



FRCC.97.R.4
July 1997

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Honourable David Anderson, P.C., M.P.
Minister of Fisheries and Oceans
200 Kent St.
Ottawa, Ontario
K1A 0E6

Dear Minister:

The terms of reference of the Fisheries Resource Conservation Council (FRCC) state, "The Council is also responsible for advising the Minister on Canada's position with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO)." Having received the report of the NAFO Scientific Council (June 1997), the FRCC is providing you with advice for the forthcoming annual meeting of the NAFO General Council and Fisheries Commission in St. John's, Newfoundland on September 15 - 19, 1997.

As in our previous reports on NAFO stocks, the FRCC wishes to reiterate that the failure of past management practices by NAFO has resulted in devastating over-exploitation of the straddling and transboundary stocks on the once prolific Grand Banks. Despite tremendous effort on the part of Canada, and progress made on key issues, we have yet to succeed at moving NAFO to fully sustainable fishing practices.

The Council remains concerned about the level of by-catch of species under moratorium in divisions 3LNO, e.g. cod, American plaice and witch flounder. Having these stocks recover and reach productive levels is imperative to the Canadian fishery. We are pleased to note that yellowtail flounder, Greenland halibut, and, witch flounder are showing some signs of improvement and we must be careful not to jeopardize this.

We have also noted improvements in the Greenland halibut (turbot) stock in division 2+3 where recruitment has been good throughout the 1990's. Council is concerned, however, about the large number of juvenile fish that appear to have been taken both inside and outside the Canadian zone. We raised this issue in our 1996 report and, at that time, we recommended Canada push for a 145 mm mesh size for this fishery in the NAFO Regulatory Area. We reiterate this recommendation again this year and we would like to see this as Canada's official position at NAFO. Further to this, work should begin in 1997 with a view to adopting a mesh size in 1998 which will allow further escapement of juvenile fish, including turbot and other flatfish species. In addition, we think it is very important to continue research in a timely manner with respect to the relative abundance of Greenland halibut throughout the stock range. It is particularly important to confirm whether or not only 18% of the estimated biomass is in 3LMNO. The current TAC for this area may well be excessive if the relative distribution determined by the recent survey is confirmed.

The FRCC fully supports Canada's position with respect to the pilot project of observer coverage on all vessels in the Regulatory Area and Canada's position that the observer program should be mandatory after the pilot project. However, we are not at all pleased with the lapses in reporting procedures for this project and we believe that Canada should seek to have this strengthened. This

program must be uniform and consistent for all parties, especially with respect to data collection, and reports on catch, discards, etc. This is a required prerequisite for accurate assessments and quota setting.

On July 29, 1997, we released publicly to you our Groundfish Conservation Framework for Atlantic Canada. You will note that we have placed an emphasis on the use of closed areas to protect spawning aggregations and concentrations of juvenile fish. We also call for the adoption of Marine Protected Areas (MPAs). The FRCC encourages Canada to identify such areas or species in the NAFO regulatory zone, and to have NAFO adopt these conservation measures. It is the opinion of the Council that with today's technology, fish have nowhere to hide and therefore, MPAs have become necessary.

In our four previous reports to the Minister of Fisheries and Oceans on Atlantic Groundfish Stocks, we have raised our concerns about the tremendous increase in the population of seals -- harp, grey, hooded and others. We believe that this is having a negative impact on the recruitment, and consequently the recovery, of groundfish stocks. This year, the NAFO Scientific Council recognized that the number of seals could be having an effect on the rebuilding of groundfish stocks. The FRCC fully supports this position.

We recognize the difficulty in reaching a consensus in an international forum such as NAFO and we commend Canada for the progress that has been made, especially this year at the Scientific Council meeting, having NAFO discuss, and commit to, the precautionary approach. We are pleased to note that a workshop will be held on the framework for implementing such an approach. The FRCC fully supports Canada's position in this matter and we hope NAFO will adopt the appropriate conservation strategies.

The FRCC believes that Canada must hold fast to its position of no shrimp fishery in division 3LNO until such time as cod, and other groundfish, have recovered in this area and a permanent effective observer program is in place. The Council also wishes to endorse the Canadian position to have the NAFO Fisheries Commission separate discussions of shrimp in divisions 3LNO and 3M from discussions of groundfish in the regulatory zone. The recovery and sustainable utilization of groundfish stocks must continue to be the Canadian priority. In the past, other nations have used the discussion of shrimp on the Flemish Cap to take time away from discussions of concern to Canada about groundfish.

In addition to the six stocks for which we give specific recommendations (see following chapter), the FRCC fully supports the NAFO Scientific Council recommendations for continued moratoria on 3M cod and 3M American plaice. We also believe that the moratorium on 3NO capelin should be continued.

We have noted with interest that the NAFO Scientific Council has recommended a 4,000 t Total Allowable Catch (TAC) for a commercial fishery of 3LNO yellowtail flounder. We also note that the Scientific Council cautions about the by-catch of American plaice in this fishery. As you will note in our stock-by-stock recommendations, the FRCC recommends that 4,000 t be used to determine if this fishery can be conducted cleanly (free of substantial amounts of by-catch of species currently under moratoria). We have also included in our recommendation all other elements of

the NAFO Scientific Council's recommendations including: careful monitoring and sampling, delaying the fishery until after the peak spawning season, and confining the fishery to 3NO. The FRCC also recommends the use of small fish protocols.

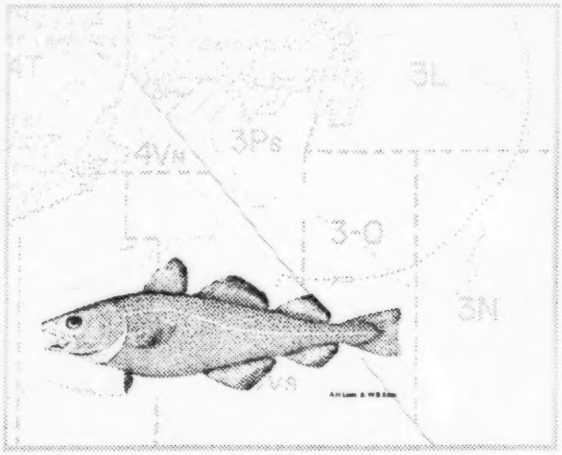
If the straddling and transboundary groundfish stocks in the NAFO area are to recover, all participants must adhere to sound conservation principles and practices. Canadian fishermen cannot be expected to pay the price alone. **Strong conservation measures which apply inside the 200 mile limit, must also apply outside the 200 mile limit.** We have emphasized this point again in our recently released Groundfish Conservation Framework for Atlantic Canada. We must be ever vigilant with our enforcement regime and make sure all players stay committed to conservation.

Best wishes for a successful NAFO meeting in September.

Fred Woodman
Chairman

STOCK-BY-STOCK RECOMMENDATIONS FOR 1998

1. Cod 3NO



History Of FRCC Recommendations:

In the June 1995 report of the NAFO Scientific Council, scientists indicated that this stock was at an all time low in 1994 and was represented mainly by 2 year-classes (those of 1989 and 1990). In particular, the year-classes since 1990 appeared to be weak and the estimates of the 1989 and 1990 year-classes, which were believed to be average, were much lower than previously estimated. Sampling information indicated that commercial fisheries had targeted these year-classes since 1991. In 1994, scientists warned that the spawning stock biomass could not begin to recover unless the 1989 and 1990 year-classes survive to maturity. In particular, they indicated that rebuilding would not happen if fisheries on immature fish continue at current high levels. The NAFO Scientific Council recommended that there be no direct fishing for cod in Div. 3N and 3O in 1996 and that by-catches in fisheries targeting other species should be kept at the lowest possible level.

In its August 1994 and 1995 letters to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended a continuation of the moratorium for cod in division 3NO. The Council was particularly concerned with the low levels of biomass and the lack of recruitment for this stock. The NAFO Fisheries Commission continued the moratorium on 3NO cod.

In August 1996, in a letter to the Minister of Fisheries and Oceans, the FRCC again recommended a continuation of the moratorium on directed fishing for 3NO cod. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3NO cod in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

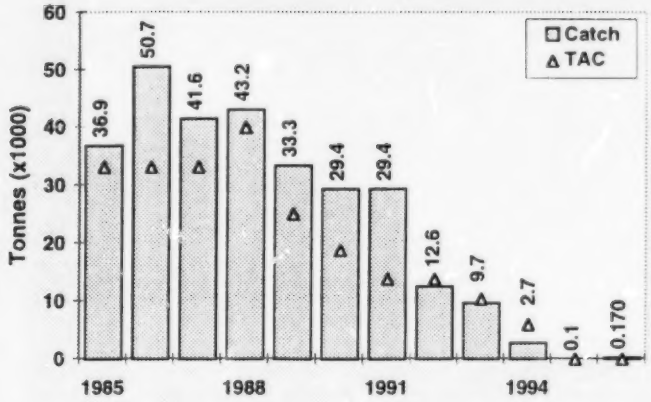
- Biomass at extremely low level.
- Stock at an all time low in 1996.
- Only weak year-classes now in the stock.

Recommendation # 1:

The FRCC recommends that:

1.1 There be no directed fishing in 1998.

1.2 By-catches be kept at the lowest possible level.



- No sequential population analysis possible due to lack of biological sampling.

The 1989 and 1990 cohorts which dominated the 1992-1995 surveys were present in the 1996 spring survey but were practically absent from the 1996 fall survey. The Council is concerned with the low level of biomass and the lack of good year classes since 1991. Under these conditions, the prospects of rebuilding for 3NO cod are poor and maximum protection must be given to the upcoming year classes. Consequently, the Council considers that no directed fishing should take place on the 3NO cod stock in 1998 and that by-catches of cod should be kept at the lowest possible level.

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator:	**Very low level**
	Compared to average
Spawning Biomass:	**Likely at very low level**
Total Biomass:	**At historically low levels**
Recruitment:	**All year classes at low levels**
Growth and Condition:	**No special comment**
Age Structure:	**All year classes weak**
Distribution:	**No special comment**
Recent Exploitation Level:	**Under moratorium since 1994**

1. Cod 3NO

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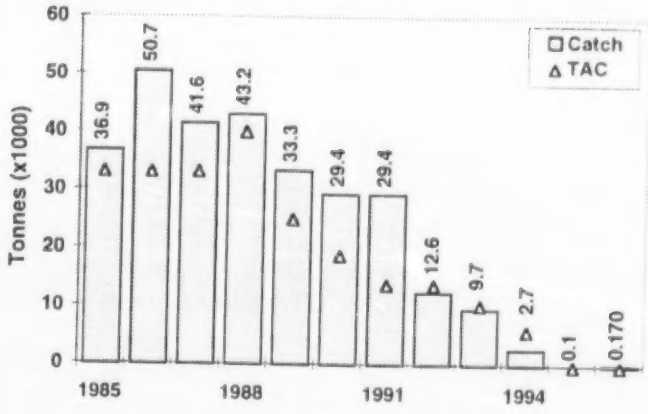

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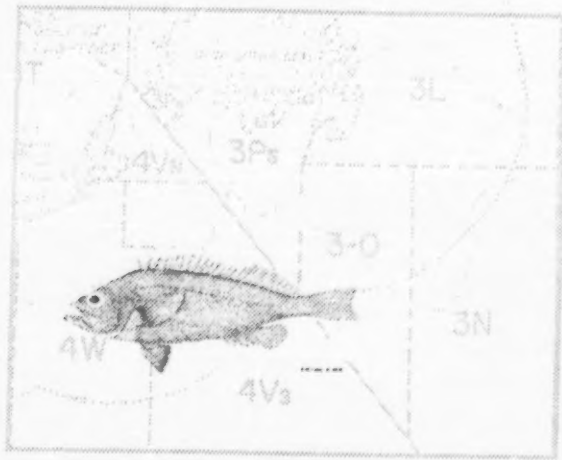
Growth and Condition:	**No special comment**
Age Structure:	**All year classes weak**
Distribution:	**No special comment**
Recent Exploitation Level:	**Under moratorium since 1994**

2. REDFISH 3LN



HISTORY OF FRCC RECOMMENDATIONS:

In the June 1995 report of the NAFO Scientific Council, the scientists concluded that redfish abundance was very low in Division 3L, with no sign of good recruitment. In Division 3N, they observed that the stock has declined from 1984 to 1991 but that "the status since then is uncertain". The Scientific Council of NAFO recommended for 1996 that "total catches of redfish in Division 3LN should not exceed 14,000t". At the September meeting of the NAFO Commission, it was agreed to set the 1995 TAC for 3LN redfish at 14,000t. The Fisheries Resource Conservation Council made no specific recommendation on this stock for 1995.

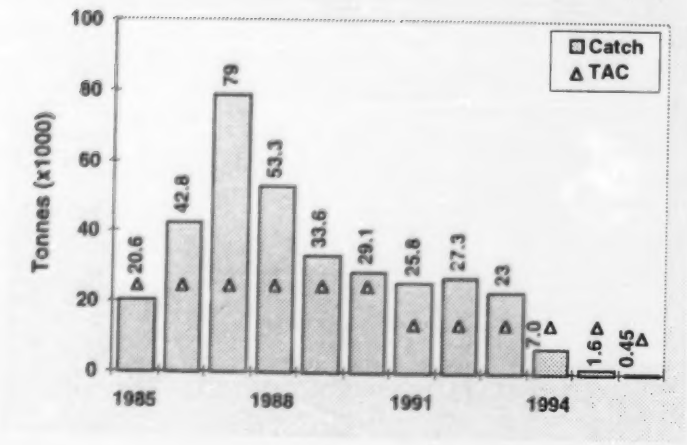
In its August 1995 letter to the Minister of Fisheries and Oceans, the Council concluded that abundance in 3L appeared to be very low, with no sign of good recruitment, and abundance in 3N had declined to an unknown extent, with no sign of good year-classes since those of 1986/87. The Council noted that for the first time in many years, the TAC was not taken in 1994, due largely to unsuccessful fisheries by several member states. The Council concluded that a cautious approach was crucial for 3LN redfish and that the TAC for 1996 should be substantially reduced from the level of 14,000t, probably to a level below the 1994 catch of 7,000t. At the September meeting of the NAFO Commission, it was agreed to reduce the TAC for 1996 to 11,000t.

In its August 1996 letter to the to the Minister of Fisheries and Oceans, the FRCC indicated that they could see little evidence to support a 14,000t TAC for 3LN redfish. The Council noted that the Fisheries Commission set the quota at 11,000 t for 1996. The NAFO Scientific Council considered that this stock had declined since the mid 1980's and continued to be at a low level, particularly in Division 3L. There was some indication of recruitment in 3N but no sign of any good year-classes to follow. For these reasons, the FRCC recommended that Canada should propose a substantial reduction in this TAC. In September 1996, the NAFO Fisheries Commission set the TAC for 1997 at 11,000t for 3LN redfish.

RECOMMENDATION # 2:

The FRCC recommends that:

- **2.1** **There be no directed fishery.**
- **2.2** **By-catch be kept at the lowest possible levels.**
- **2.3** **There be no expansion of the 3M shrimp fishery into 3LN because of potential by-catch of juvenile redfish in the small mesh shrimp gear.**



The FRCC also cautioned that any further expansion of the shrimp trawl fishery into 3LN should be discouraged. The FRCC noted with concern the high discard rate of small flatfish and redfish in other shrimp fisheries and the effect this could have on recruitment and loss of yield for these stocks, which were at critically low levels. Given these reasons, the FRCC recommended that approach taken by Canada at NAFO in the previous year with respect to an expanded 3LN Shrimp trawl fishery be continued.

ANALYSIS:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Biomass low in 3L with no sign of good recruitment.
- Little or no sign of good recruitment since 1986 and 1987 year classes.
- Stock at a very low level.

The Council notes that catches continued to decline in 1996, reaching a historical low (453t) for this fishery. The Council considers that the shortfall of the catch below the total allowable catch in recent years is largely the result of unsuccessful commercial fisheries carried by member states. This is likely an indication of the poor status of the 3LN redfish stock. With no sign of good recruitment since the 1986-87 year classes, the prospects for rebuilding the 3LN redfish stock are poor.

The Council continues to believe that an expansion of the shrimp trawl fishery from 3M to 3LN should be discouraged so that juvenile redfish are given maximum protection. The Council believes that the approach taken by Canada at NAFO with respect to this possible expansion should be continued.

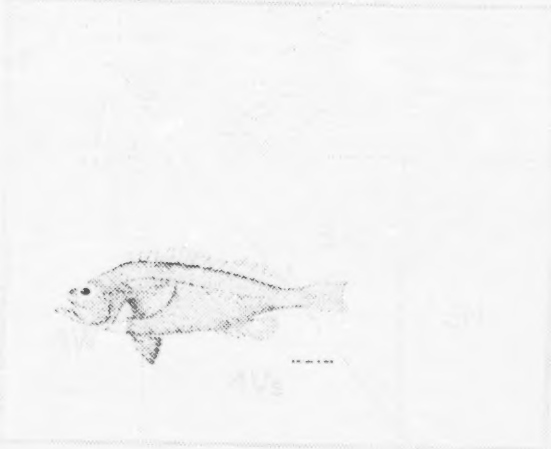
COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Very low

	Compared to average
Spawning Biomass:	**Likely very low level**
Total Biomass:	**Very low level**
Recruitment:	**Little sign of good recruitment after 1986-87 year classes**
Growth and Condition:	**Typically slow growth**
Age Structure:	**Dominated by 1986-87 year classes**
Distribution:	**No special comment**

Recent Exploitation Level: Low

2. REDFISH 3LN



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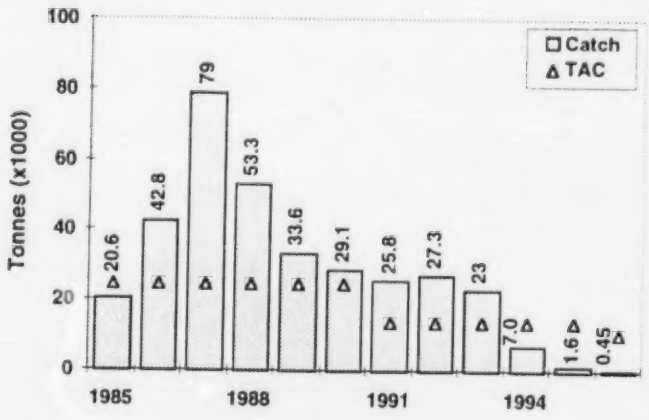

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Age Structure:	**Dominated by 1986-87 year classes**
Distribution:	**No special comment**

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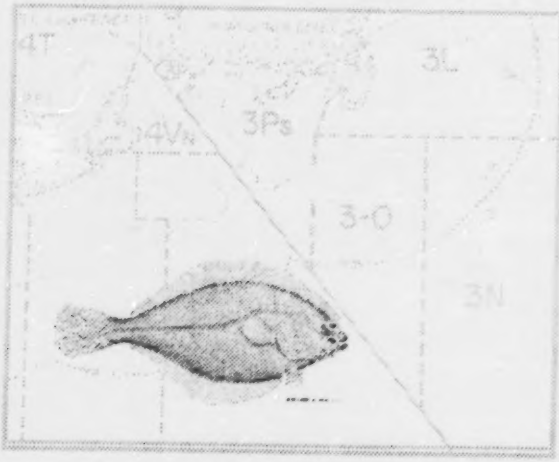
3. American Plaice 3LNO



History Of FRCC Recommendations:

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In its letters of August 1994 and 1995 to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended continuing the moratorium for American plaice in Division 3LNO. The Council also pointed at the need to address the concerns raised by the exploitation of immature fish in directed fisheries by non-contracting parties, as well as the suspected high and increasing by-catches of American plaice in the Greenland halibut fishery by both contracting and non-contracting parties. The Council was particularly concerned with the low levels of biomass and the apparent lack of recruitment for this stock.

In August 1996, in a letter to the Minister of Fisheries and Oceans, the FRCC again recommended continuing the moratorium on fishing for 3LNO American plaice. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3LNO American plaice in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Stock at a low level
- No good year-classes since 1987.
- Stock composed of fish less than 6 years old.

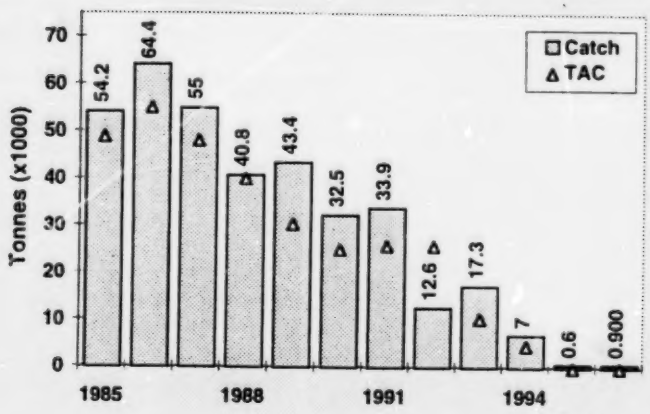
Recommendation # 3:

The FRCC recommends that:

3.1. There be no directed fishing in 1998.

3.2 Measures be undertaken to minimize the by-catch of American plaice in the Greenland halibut fishery, including an increase in the minimum mesh size to 145 mm.

3.3 Protection of key juvenile nursery grounds through the establishment of closed areas to all fishing activity be implemented as a priority in 1998.



Although once the largest flatfish fishery in the Northwest Atlantic, and in spite of being under a moratorium since 1995, surveys suggest that this stock has reached a very low level and could still be in decline.

The Council believes that a recovery of this stock is unlikely in the short term as high abundance of juveniles has not translated into a stronger fishable stock in the past, likely due to high by-catch levels in the Greenland halibut fishery.

Since this stock is in such fragile condition, the Council believes that additional protection of nursery grounds be considered with urgency.

COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Very low

	Compared to average
Spawning Biomass:	**Very low**
Total Biomass:	**At low levels**
Recruitment:	**No good recruitment since 1987**
Growth and Condition:	**No apparent change**
Age Structure:	**Less than 5% of biomass age 9 or older, most fish < 6 years of age**
Distribution:	**No special observation**

Recent Exploitation Level: Under moratorium

3. American Plaice 3LNO

History Of FRCC Recommendations:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that the abundance of American plaice in 3LNO was at a record low level. Given the extremely low population size, the concerns with respect to the spawning biomass, and the apparently large mortality on juvenile plaice, the NAFO Scientific Council recommended that there be no fishing for American plaice in Div. 3LNO in 1996 and that by-catches be reduced to the lowest possible level.

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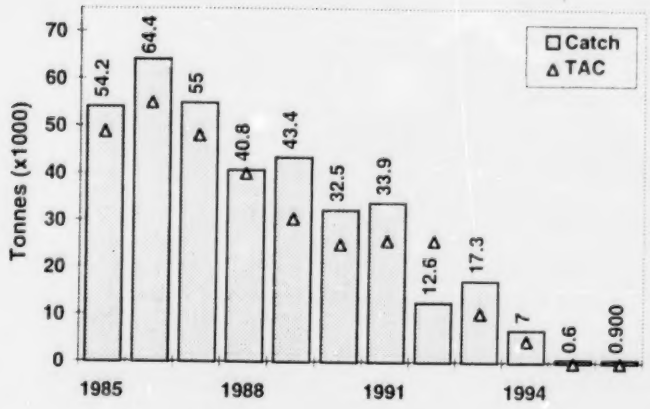

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Spawning Biomass:	**Very low**
Total Biomass:	**At low levels**
Recruitment:	**No good recruitment since 1987**
Growth and Condition:	**No apparent change**
Age Structure:	**Less than 5% of biomass age 9 or older, most fish < 6 years of age**
Distribution:	**No special observation**

Recent Exploitation Level: Under moratorium

4. Witch Flounder 3NO

History Of FRCC Recommendations:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that this stock was likely at a very low level. The NAFO Scientific Council recommended that no fishing be permitted on witch flounder in Division 3NO in 1996 in an effort to rebuild this stock to former levels. Scientists also recommended reducing by-catches to the lowest possible level.

In its letters of August 1994 and 1995 to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended a continuation of the moratorium for witch flounder in Division 3NO. The moratorium was continued in 1996.

In June 1996, the NAFO Scientific Council recommended that no fishing be allowed on this stock in 1997 to allow for stock rebuilding. It also recommended that by-catches be kept at the lowest possible level. In August 1996, in a letter to the Minister of Fisheries and Oceans, the FRCC again recommended continuing the moratorium on fishing for 3NO witch flounder in 1997. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3NO witch flounder in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

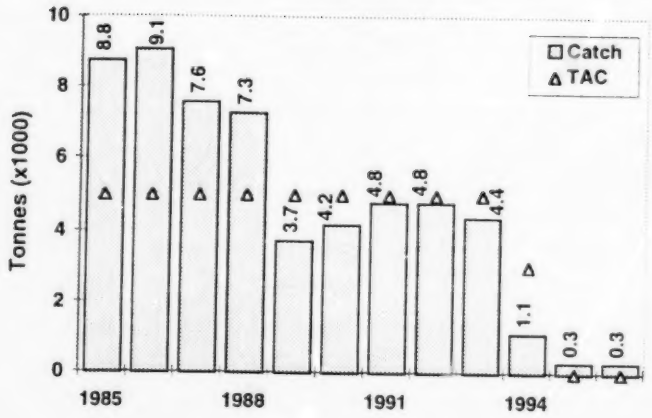
- Stock remains at a low level;
- Some improvement between 1996 and 1997 survey estimates.

The Council believes that this stock remains at a very low level and that the moratorium in place since 1995 should be continued.

Recommendation # 4:

The FRCC recommends that:

4.1 **There be no directed fishing, to allow stock rebuilding.**
4.2 **Witch flounder by-catch be kept at the lowest possible level.**



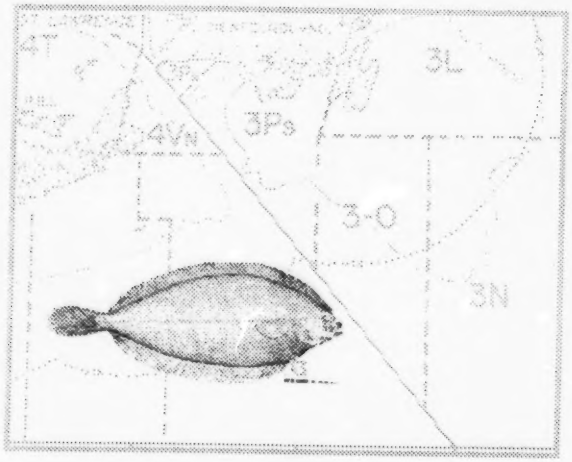
COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Very low

	Compared to average
Spawning Biomass:	Likely at low level
Total Biomass:	Low; slight improvement in 96/97 survey
Recruitment:	No observation
Growth and Condition:	No observation
Age Structure:	No data
Distribution:	No special observation

Recent Exploitation Level: Under moratorium

4. Witch Flounder 3NO



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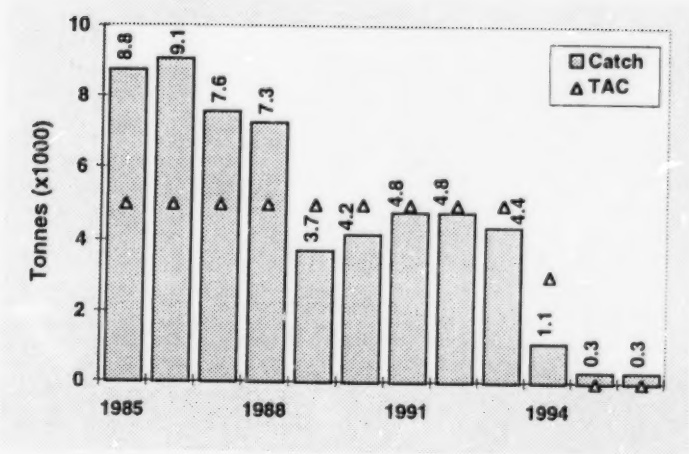

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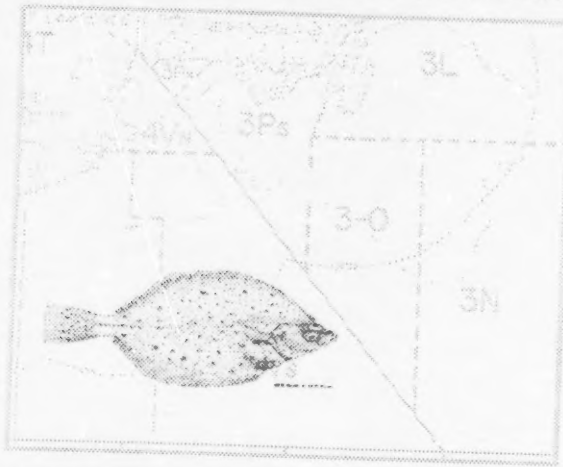
Total Biomass:	**Low; slight improvement in 96/97 survey**
Recruitment:	**No observation**
Growth and Condition:	**No observation**
Age Structure:	**No data**
Distribution:	**No special observation**

Recent Exploitation Level: Under moratorium

5. YELLOWTAIL FLOUNDER 3LNO



HISTORY OF FRCC RECOMMENDATIONS:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that the potential growth on the stock from the relatively large 1984-86 year-classes had not occurred, likely because of large catches of these cohorts as juveniles by fisheries in the Regulatory Area, and because the TAC had been exceeded each year from 1984 to 1993.

The NAFO Scientific Council concluded that this stock was at a low level. The scientists also noted that the geographic distribution of this stock had contracted, making it very vulnerable to over-exploitation. In view of the above, the NAFO Scientific Council recommended that there be no directed fishing on yellowtail flounder in 1996 and that by-catches be reduced to the lowest possible level.

In its letters of August 1994 and 1995 to the Minister of Fisheries and Oceans, the Fisheries Resource Conservation Council recommended the continuation of the moratorium for yellowtail flounder in Division 3LNO. The Council also pointed out the need to address the concerns raised by the exploitation of immature fish in the directed fisheries in the Regulatory Area by non-contracting parties. The Council was particularly concerned with the low levels of biomass and the lack of recruitment for this stock. The NAFO Fisheries Commission continued the moratorium on 3LNO yellowtail flounder.

In its August 1996 letter to the Minister of Fisheries and Oceans, the Council reiterated its

RECOMMENDATION # 5:

The FRCC recommends that:

5.0 The total allowable catch be established at 4,000 t to permit a limited directed fishery, provided that the following conditions are met;

5.1 The yellowtail fishery be restricted to divisions 3NO.

5.2 By-catches of American plaice, cod and witch flounder be kept at the lowest possible levels, in part through seasonal adjustments to fishing activity.

5.3 The start of the fishing season be delayed until after peak spawning period in July.

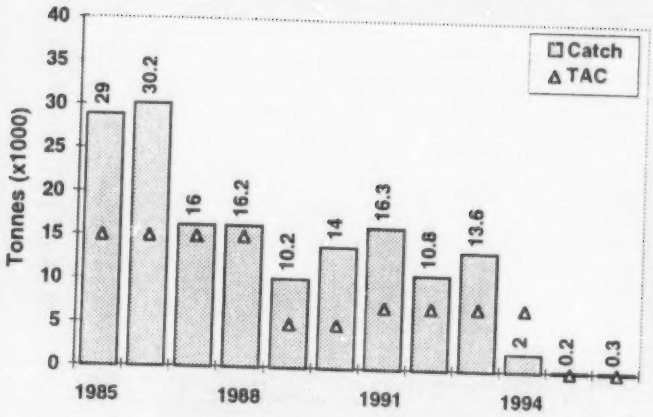
5.4 The protection of key juvenile nursery grounds through the establishment of closed areas to all fishing activity be implemented as a priority in 1998.

5.5. Juveniles be further protected through the implementation of strict small fish protocols and avoidance of key juvenile nursing areas.

5.6. The minimum mesh size in this fishery be established at 145 mm.

5.7. Monitoring, evaluation and sampling programs be developed prior to the commencement of fishing.

5.8. There be a mid-season review of fishing activity so as to ensure the effectiveness of the by-catch and small fish protocols.



recommendation for the continuation of the moratorium on 3LNO yellowtail flounder. The FRCC noted that the potential growth from the 1984-86 year-classes had not occurred, probably because of large catches of juveniles in the NAFO Regulatory Area. In September 1996, the NAFO Fisheries Commission agreed to continue the moratorium on fishing 3LNO yellowtail flounder in 1997.

Analysis:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Stock size has increased since 1994; still lower than in the 1980s.
- Juveniles are concentrated in and around the nursery area located in the transboundary area of division 3N.
- Recent year-classes below average.
- Stock is capable of sustaining a limited directed fishery.

Based on the results of several surveys, there appears to have been a slow but steady increase in biomass over recent years, although it is still well below levels recorded in the early 1980's. The NAFO Scientific Council has recommended using the lowest exploitation rate on record (6%) to establish a TAC (4,000 t) for 1998. However, the FRCC remains concerned with the potential impact of a by-catch of American plaice and cod in such a fishery. The Council is also concerned with the limited geographical distribution of the yellowtail flounder stock, particularly with low densities in division 3L. For these reasons, the Council believes that exploitation rates should be kept at a low level. For the purpose of the 1998 fishery, the TAC should be established at 4,000t. A TAC of 4,000t seems acceptable if proper conservation measures are effectively implemented.

In addition, the FRCC fully supports the recommendations of the NAFO Scientific Council to delay the beginning of the fishery until after peak spawning has taken place, to confine the yellowtail fishery to divisions 3NO, and to ensure that careful monitoring and sampling take place. Because by-catches of American plaice could be substantial in this fishery and because of the necessity to protect juvenile flatfish in the known nursery areas, the FRCC also considers that any fishery on yellowtail should be carried out under strict small fish protocols.

Council's views on Stock Status:

Overall Stock Indicator: Gradual improvement

	Compared to average
Spawning Biomass:	**Undetermined**
Total Biomass:	**Increased since 1994 but likely still below levels of 1980's**
Recruitment:	**Below average**
Growth and Condition:	**Weight at age stable**
Age Structure:	**Stable with several cohorts**
Distribution:	**Expanding compared to early 90's; low densities in 3L**

Recent Exploitation Level: Under moratorium since 1995

5. YELLOWTAIL FLOUNDER 3LNO

HISTORY OF FRCC RECOMMENDATIONS:

In the June 1995 Report of the NAFO Scientific Council, scientists indicated that the potential growth on the stock from the relatively large 1984-86 year-classes had not occurred, likely because of large catches of these cohorts as juveniles by fisheries in the Regulatory Area, and because the TAC had been exceeded each year from 1984 to 1993.

The NAFO Scientific Council concluded that this stock was at a low level. The scientists also noted that the geographic distribution of this stock had contracted, making it very vulnerable to over-exploitation. In view of the above, the NAFO Scientific Council recommended that there be no directed fishing on yellowtail flounder in 1996 and that by-catches be reduced to the lowest possible level.

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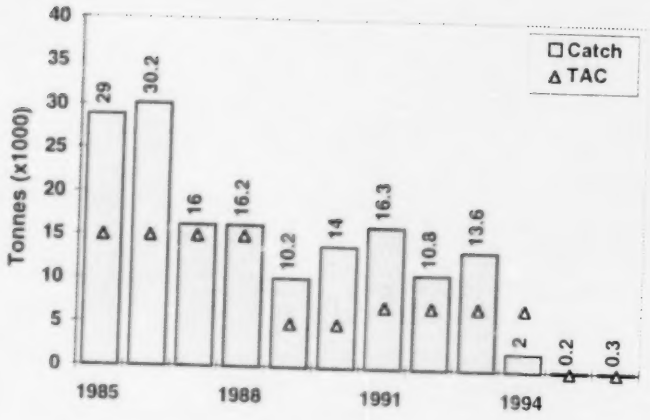
- 5.4 **The protection of key juvenile nursery grounds through the establishment of closed areas to all fishing activity be implemented as a priority in 1998.**
- 5.5. **Juveniles be further protected through the implementation of strict small fish protocols and avoidance of key juvenile nursing areas.**
- 5.6. **The minimum mesh size in this fishery be established at 145 mm.**
- 5.7. **Monitoring, evaluation and sampling programs be developed prior to the commencement of fishing.**
- 5.8. **There be a mid-season review of fishing activity so as to ensure the effectiveness of the by-catch and small fish protocols.**



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COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Gradual improvement

	Compared to average
Spawning Biomass:	**Undetermined**
Total Biomass:	**Increased since 1994 but likely still below levels of 1980's**
Recruitment:	**Below average**
Growth and Condition:	**Weight at age stable**
Age Structure:	**Stable with several cohorts**
Distribution:	**Expanding compared to early 90's; low densities in 3L**

Recent Exploitation Level: Under moratorium since 1995

6. GREENLAND HALIBUT 2+3KLMNO

HISTORY OF FRCC RECOMMENDATIONS:

In August 1993, the Council called for significant reductions in catches in the Regulatory Area and for a joint commitment to address scientific questions related to stock structure. In November 1993, the Council concluded that the 1994 TAC for Greenland halibut should be reduced substantially and that catches in the order of the historical catch level of 25,000t should be a maximum level.

In June 1994, the Council noted the absence of controls on the foreign fishery outside 200 miles and recommended that all means be taken by Canada to limit the effort on this stock. In November 1994, the Council reiterated that catches in the order of the historical catch level of 25,000t should be a maximum level.

The NAFO Scientific Council concluded in June 1995 that the TAC for Greenland halibut in 2+3KLMNO should continue to be set at levels well below the catches achieved in previous years until it became clear that the stock was increasing. In addition, the Scientific Council recommended that measures be considered to reduce, as much as possible, the exploitation of juvenile Greenland halibut.

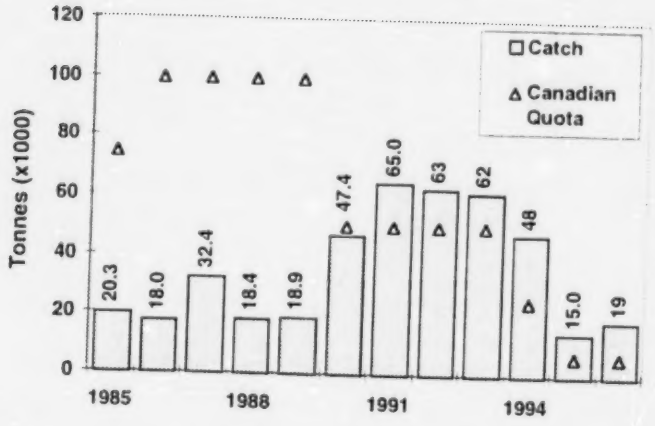
In August 1995, the FRCC re-iterated the need for maintaining reduced TACs. The conclusion of the Scientific Council that the large catches of immature Greenland halibut were a major impediment to stock rebuilding was noted. The Council suggested that Canada's objective for the near future should be to rebuild the stock to biomass levels of the early 1980s in order to support a sustainable fishery in the long-term. The NAFO Fisheries Commission concluded at the September 1995 meeting that the 1996 TAC would be set at 20,000t for Greenland halibut in 3LMNO, with an additional TAC of 7,000t to be allowed in SA2+3K (Canada only).

In August 1996, the FRCC was encouraged by the new evidence of good recruitment for Greenland halibut. The Council indicated that the above-average year-classes from the 1990's must be protected to allow the stock to rebuild and that catching large numbers of these fish

RECOMMENDATION # 6:

The FRCC recommends that:

- 6.1 **The current Canadian quota in 2+3K be maintained at 7,000t for 1998.**
- 6.2 **Measures be taken to protect juveniles such as small fish protocols.**
- 6.3 **Canada propose to NAFO that the minimum mesh be increased to 145mm in the NAFO Regulatory Area.**
- 6.4 **The by-catch of American plaice be kept to the lowest possible level.**



as juveniles would waste the potential for rebuilding the stock. In September 1996, the NAFO Fisheries Commission concluded that the 1997 TAC would continue to be set at 20,000t for Greenland halibut in 3LMNO. The Canadian quota for 1997 in 2+3K was established at 7,000t in keeping with the FRCC recommendations.

ANALYSIS:

The June 1997 report of the NAFO Scientific Council makes the following observations:

- Biomass of older fish remains at a low level.
- 1990-1994 year-classes appear to be above average; 1995 year-class also possibly large.
- Improvements in most indices of abundance in 1996.

The FRCC notes that the additional controls in the NAFO Regulatory Area have likely resulted in a substantial reduction of fishing mortality on the stock in 1995 and 1996. The Council is encouraged by the signs of good recruitment since 1990 and notes that continued conservation measures should allow these year classes to grow and contribute to the spawning biomass in the near future.

Despite these positive signs, we believe it would be premature at this stage to increase catch levels until the stock has benefitted more substantially from this recruitment.

The Council notes that catches from this stock have consisted mainly of immature fish and believes that additional measures such as increased mesh size and small fish protocols should be implemented in the NAFO Regulatory Area so as to be consistent with similar practices inside the Canadian zone.

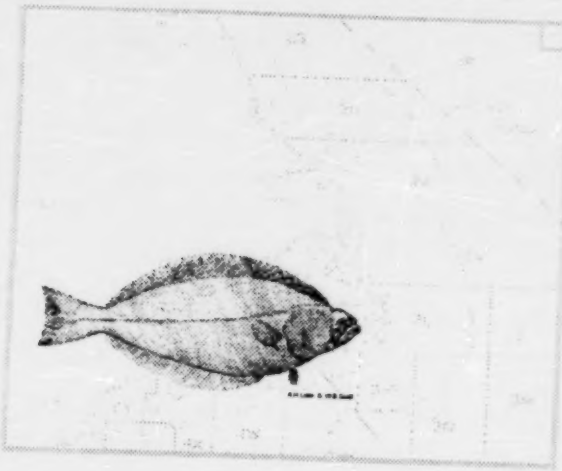
COUNCIL'S VIEWS ON STOCK STATUS:

Overall Stock Indicator: Improving

	Compared to average
Spawning Biomass:	**Fishable biomass, low**
Total Biomass:	**Showing signs of recovery**
Recruitment:	**Good year-classes since 1990**
Growth and Condition:	**No special observation**
Age Structure:	**Older age-groups remain at low levels**
Distribution:	**1996 fall survey shows distribution at 17% 2GH, 65% 2J3K, 18% 3LMNO**

Recent Exploitation Level: Reduced in 1995 and 1996

6. GREENLAND HALIBUT 2+3KLMNO



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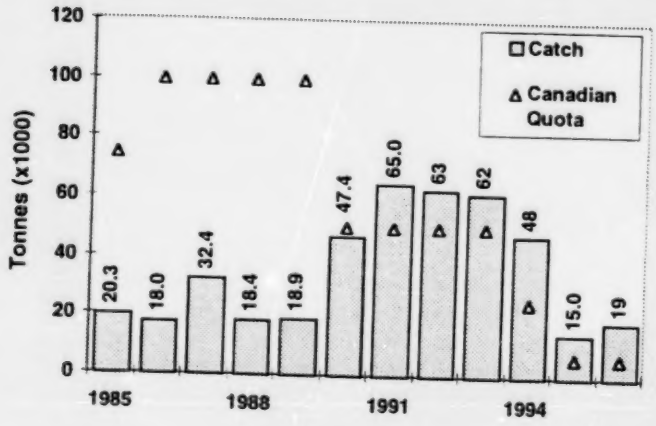

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